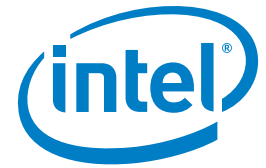


PRODUCT BRIEF

Intel® Q57 Express Chipset

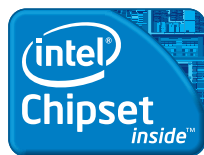
Performance and Mainstream Desktop



Intel® Q57 Express Chipset

A revolutionary transformation in Intel chipset architecture

Desktop PC systems based on the Intel® Q57 Express Chipset, combined with an Intel® Core™ vPro™ processor, deliver smart security, cost-saving manageability, and intelligent performance for business platforms.



The Intel Q57 Express Chipset

The Intel® Q57 Express Chipset continues to push innovation with a new architecture designed to deliver quality, performance, and industry-leading I/O technologies on platforms powered by Intel® Core™ i7-800, Core™ i5, or Core™ i3 processors.

The Intel Q57 Express Chipset, when combined with an Intel® Core™ vPro™ processor, delivers smart security, cost-saving manageability, and intelligent performance for business platforms. The new technologies featured in the Intel Q57 Chipset include enhancements to Intel® Active Management Technology, Intel® Rapid Storage Technology,¹ and hardware-based KVM Remote Control.

Revolutionary Single-Chip Architecture with Enhanced Chipset Capabilities

The Intel Q57 Express Chipset is part of Intel® 5 Series Chipsets – a new generation of chipsets with a single chip replacing the traditional two-chip approach. The repartition of the processor and chipset into two devices enables performance and system improvements over previous generations.

- PC platforms based on Intel 5 Series Chipsets use up to 50 percent less power than Intel® 4 Series-based platforms.
- Smaller form factors are possible because the footprint of Intel 5 Series Chipsets is 65 percent smaller than that of the Intel 4 Series chipset family with Intel® ICH10.
- To take advantage of modern peripheral devices, Intel 5 Series Chipsets provide expanded I/O device ports for advanced usage models.

Integrated Intel® HD Graphics

The Intel Q57 Express Chipset, when combined with an Intel Core i5 or Core i3 processor with Intel® HD Graphics, delivers on key business needs.

- **Quality and stability.** Intel HD Graphics delivers a stable, high-quality Windows 7 experience, supports the Intel® Stable Image Platform Program, and is fully validated with Intel vPro standard manageability platform solutions.
- **Low power.** Intel HD Graphics enables more power-efficient performance and greater energy efficiency for smaller form factors compared to discrete solutions.
- **Multi-display.** Intel HD Graphics enables dual simultaneous display output (dual HDMI or DisplayPort) for enhanced productivity.

Intel Core vPro Processor

The Intel Q57 Express Chipset enables full support of Intel Core i7 and i5 vPro processors and also supports manageability standards such as DASH. The best PCs for business are built with Intel vPro technology² which provides the following benefits:

- **Security without compromising manageability.** Manage PCs in Endpoint Access Control secure network, add extra virus and agent presence checks, stream OS or applications into partitions secured with Intel® Virtualization Technology and Intel® Trusted Execution Technology³ and protect assets and data with Intel® Anti-Theft Technology.⁴

- **Manageability whenever, wherever.** Remotely resolve problems with hardware-based keyboard-video-mouse (KVM) remote control even if the PC is outside the enterprise firewall. Collect hardware and software inventory data on PCs regardless of their power or health status, and deploy patches to PCs that are turned off.
- **Energy efficiency without compromising manageability.** Save energy and money by powering down systems at night without losing manageability. PCs can be securely powered on at any time for patches and system maintenance.

Intel® Stable Image Platform Program

Reducing the variety of supported hardware platforms greatly simplifies enterprise PC management, which in turn lowers total cost of ownership. One critical element in reducing PC hardware variation involves deploying standardized desktop and laptop PC configurations. The Intel® Stable Image Platform Program (Intel® SIPP) can help your company identify and deploy standardized, stable image PC platforms for at least 15 months. The Intel Q57 Express Chipset supports Intel SIPP.

Intel Rapid Storage Technology¹ (Intel® RST)

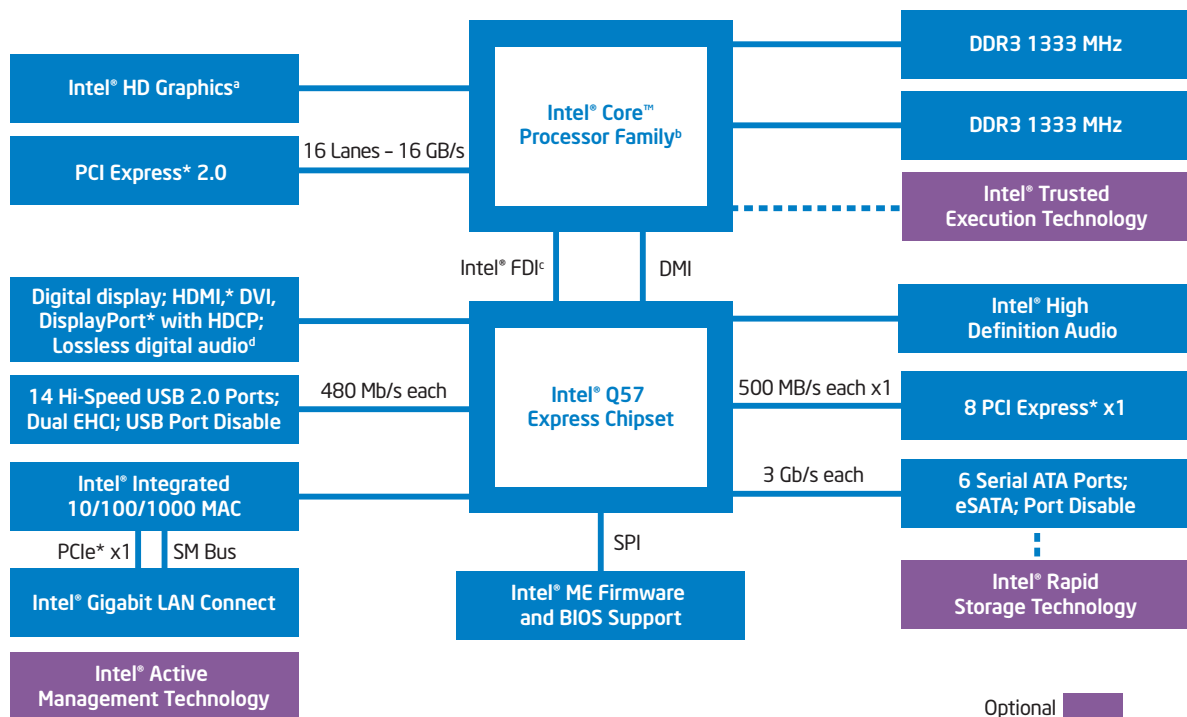
Intel® RST 9.5 introduces an all-new, completely redesigned UI with a focus on making it easy and intuitive to configure your system for data protection or performance. Intel RST 9.5 has also been optimized to bring additional storage performance to Intel 5 Series Chipsets. When using one or more hard drives, users can take advantage of enhanced performance and lower power consumption. When using more than one drive, users have additional protection against data loss caused by hard-drive failures.

Valuable digital memories are protected against a hard-drive failure when the system is configured for any one of three fault-tolerant RAID levels: RAID 1, RAID 5, or RAID 10. By seamlessly storing copies of data on one or more additional hard drives, any hard drive can fail without data loss or system downtime. When the failed drive is removed and a replacement installed, data fault tolerance is easily restored. The fault tolerance also allows businesses to minimize downtime that may occur due to mechanical failures of hard drives.

Intel RST also provides benefits to users with a single hard drive. Using Advanced Host Controller Interface (AHCI), storage performance is improved through Native Command Queuing (NCQ).

Intel® Rapid Recovery Technology

With the ability to instantly boot from a clone hard drive, Intel® Rapid Recovery Technology provides a fast, easy-to-use method for data recovery and return to operation. Native support for external SATA* ports (eSATA), combined with Intel RST, provides the flexibility to add an external drive for increased data storage with up to six-times-faster performance than USB* 2.0 or IEEE 1394 400. Support for SATA also enables the full SATA interface speed of up to 3 Gb/s outside the chassis.



^aNot available on all processors.
^bCompatible with Intel® Core™ i7-800 processor series, Intel® Core™ i5, and Intel® Core™ i3 processor families.
^cIntel Flexible Display Interface.
^dAvailable with Intel HD Graphics only.

Figure 1. Intel® Q57 Express Chipset Platform Block Diagram

Intel® Q57 Express Chipset Features at a Glance

Features	Benefits
Intel vPro Technology ²	<ul style="list-style-type: none"> PCs with an Intel Core vPro processor enable IT to take advantage of hardware-assisted security and manageability capabilities that make it easier to maintain, manage, and protect business PCs.
Intel Active Management Technology ² (Intel AMT)	<ul style="list-style-type: none"> Using built-in platform capabilities and popular third-party management and security applications, Intel AMT allows IT to better discover, heal, and protect networked computing assets.
Intel Remote PC Assist Technology	<ul style="list-style-type: none"> Intel Remote PC Assist Technology extends the advantages of Intel vPro technology by enabling remote manageability over the Internet. This technology enables you to proactively manage PCs remotely, make a fast call for help, and request remote technical assistance if you encounter a problem with your PC, even when the OS, network software, or applications are not functioning.
Intel Anti-Theft Technology ⁴ (Intel AT)	<ul style="list-style-type: none"> Intel AT allows systems to be disabled if they are lost or stolen. The technology can be used with or without a connection to the Internet or a corporate network. Intel AT can block the OS from loading, even if the hard drive is replaced or reformatted. Intel AT can also be used to disable access to data encryption keys and block access to valuable data on the hard drive, even if the drive is moved to a different system.
Intel Trusted Execution Technology ³ (Intel TXT)	<ul style="list-style-type: none"> Intel TXT for safer computing is a versatile set of hardware extensions to Intel processors and chipsets that enhance the digital office platform with security capabilities such as measured launch and protected execution. Intel TXT provides hardware-based mechanisms that help protect against software-based attacks and protects the confidentiality and integrity of data stored or created on the client's PC.
Intel Virtualization Technology (Intel VT) ³	<ul style="list-style-type: none"> Intel VT combined with software-based virtualization solutions provides maximum system utilization by consolidating multiple environments into a single PC. With Intel vPro technology built into desktop PCs, IT can remotely manage systems while providing highly secure, centralized, and virtualized IT services to end users.
Intel® Stable Image Platform Program	<ul style="list-style-type: none"> The Intel Stable Image Platform Program (Intel® SIPP) can help your company identify and deploy standardized, stable image PC platforms for at least 15 months.
Intel Rapid Storage Technology ¹ (Intel RST)	<ul style="list-style-type: none"> With additional hard drives added, Intel RST provides quicker access to digital photo, video, and data files on single-drive or multi-drive systems with RAID 0, 5, and 10, and greater data protection against a hard-drive failure with RAID 1, 5, and 10. Support for external SATA (eSATA) enables the full SATA interface speed outside the chassis, up to 3 Gb/s.
Intel Rapid Recovery Technology	<ul style="list-style-type: none"> Intel's latest data protection technology provides a recovery point that can be used to quickly recover a system if a hard drive fails or if there is data corruption. The clone can also be mounted as a read-only volume to allow a user to recover individual files.
Intel® Flexible Display Interface ⁵ (Intel® FDI)	<ul style="list-style-type: none"> Intel FDI provides an innovative path for two independently controlled channels of integrated graphics display data to be transported to the Intel 5 Series Chipset.
Support for HDMI, DisplayPort, and DVI*	<ul style="list-style-type: none"> High Definition Multimedia Interface (HDMI) delivers uncompressed HD video and uncompressed multichannel audio in a single cable, supporting all HD formats, including 720p, 1080i, and 1080p. Dual Independent Display expands the viewable workspace to two monitors.
Intel® High Definition Audio ⁶ (Intel® HD Audio)	<ul style="list-style-type: none"> Integrated audio support enables premium digital surround sound and delivers advanced features such as multiple audio streams and jack re-tasking.
Intel® Quiet System Technology (Intel® QST)	<ul style="list-style-type: none"> Intelligent fan-speed control algorithms use operating temperature ranges more efficiently to reduce system noise by minimizing fan speed changes.
Universal Serial Bus (USB)	<ul style="list-style-type: none"> Hi-Speed USB 2.0 provides performance enhancements, including a design data rate of up to 480 megabits per second (Mbps) with up to 14 USB 2.0 ports.
USB 2.0 rate matching hub	<ul style="list-style-type: none"> The rate matching hub enables lower power requirements and manages the transition of the communication data rate from the high speed of the host controller to the lower speed of USB full-speed / low-speed devices.
Serial ATA (SATA) 3 Gb/s	<ul style="list-style-type: none"> High-speed storage interface supports faster transfer rate for improved data access with up to 6 SATA ports.
eSATA	<ul style="list-style-type: none"> SATA interface designed for use with external SATA devices. eSATA provides a link for 3 Gb/s data speeds to eliminate bottlenecks found with current external storage solutions.
SATA port disable	<ul style="list-style-type: none"> Enables individual SATA ports to be enabled or disabled as needed. This feature provides added protection of data by preventing malicious removal or insertion of data through SATA ports. Especially targeted for eSATA ports.
PCI Express* 2.0 interface	<ul style="list-style-type: none"> The PCI Express 2.0 interface allows up to 2.5 GT/s for fast access to peripheral devices and networking with up to 8 PCI Express 2.0 x1 ports, configurable as x2 and x4 depending on motherboard designs.
USB port disable	<ul style="list-style-type: none"> USB port disable allows individual USB ports to be enabled or disabled as needed. This feature provides added data protection by preventing malicious removal or insertion of data through USB ports.
Intel® integrated 10/100/1000 MAC	<ul style="list-style-type: none"> Provides support for the Intel® 82578DC Gigabit Network Connection.
Green technology	Manufactured lead-free and halogen-free.

For more information, visit www.intel.com/products/desktop/chipsets

⁴ Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See www.intel.com/products/processor_number for details.

¹ Intel® Rapid Storage Technology requires the computer have an Intel RST-enabled Intel chipset, RAID controller in the BIOS enabled and the Intel Rapid Storage Technology software driver installed. Please consult your system vendor for more information.

² Intel® vPro™ technology includes powerful Intel® Active Management Technology. Intel Active Management Technology (Intel® AMT) requires the computer system to have an Intel AMT-enabled chipset, network hardware and software, as well as connection with a power source and a corporate network connection. Setup requires configuration by the purchaser and may require scripting with the management console or further integration into existing security frameworks to enable certain functionality. It may also require modifications of implementation of new business processes. With regard to notebooks, Intel AMT may not be available or certain capabilities may be limited over a host OS-based VPN or when connecting wirelessly, on battery power, sleeping, hibernating, or powered off. For more information, see www.intel.com/technology/platform-technology/intel-amt.

³ Intel® Virtualization Technology (Intel® VT), Intel® Trusted Execution Technology (Intel® TXT), and Intel® 64 architecture require a computer system with a processor, chipset, BIOS, enabling software and/or operating system, device drivers, and applications designed for these features. Performance will vary depending on your configuration. Contact your vendor for more information.

⁴ No computer system can provide absolute security under all conditions. Intel® Anti-Theft Technology (Intel® AT) (also referred to as the "poison pill" in some documents) requires the computer system have an Intel AT-enabled chipset, BIOS, firmware release, software, and an Intel AT-capable service provider/ISV application and service subscription. Intel AT performs the encrypted data access disable by preventing access to or deleting cryptographic material (e.g., encryption keys) required to access previously encrypted data. ISV-provided Intel AT-capable encryption software may store this cryptographic material in the PC's chipset. In order to restore access to data when the system is recovered, this cryptographic material must be escrowed/backed up in advance in a separate device or server provided by the security ISV/service provider. The detection (triggers), response (actions), and recovery mechanisms only work after the Intel AT functionality has been activated and configured. The activation process requires an enrollment procedure in order to obtain a license from an authorized security vendor/service provider for each PC or batch of PCs. Activation also requires setup and configuration by the purchaser or service provider and may require scripting with the console. Certain functionality may not be offered by some ISVs or service providers. Certain functionality may not be available in all countries. Intel assumes no liability for lost or stolen data and/or systems or any other damages resulting thereof.

⁵ Intel® Flexible Display Interface (Intel® FD) and the chipset graphic display interfaces require a computer system with a processor, chipset, BIOS, and enabling software for the Intel® Graphic Media Accelerator.

⁶ Intel® High Definition Audio (Intel® HD Audio) requires a system with an appropriate Intel® chipset and a motherboard with an appropriate codec and the necessary drivers installed. System sound quality will vary depending on actual implementation, controller, codec, drivers, and speakers. For more information about Intel HD Audio, refer to www.intel.com/design/chipsets/hdaudio.htm.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL® PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER, AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS, INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. UNLESS OTHERWISE AGREED IN WRITING BY INTEL, THE INTEL PRODUCTS ARE NOT DESIGNED NOR INTENDED FOR ANY APPLICATION IN WHICH THE FAILURE OF THE INTEL PRODUCT COULD CREATE A SITUATION WHERE PERSONAL INJURY OR DEATH MAY OCCUR.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.


The products described in this document may contain design defects or errors known as errata, which may cause the product to deviate from published specifications. Current characterized errata are available on request. Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order. Copies of documents, which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or by visiting Intel's Web site at www.intel.com.

Copyright © 2009 Intel Corporation. All rights reserved. Intel, the Intel logo, Core, and Core inside are trademarks of Intel Corporation in the U.S. and other countries.

*Other names and brands may be claimed as the property of others.

Printed in USA

1209/GH/OCG/XX/PDF

 Please Recycle

323191-001US

